

IN THE CLAIMS

This listing of claims replaces all prior versions and listings of the claims in the above-referenced application.

1. (Withdrawn) A light-emitting device comprising:
a semiconductor structure including at least one p-type layer and one n-type layer; and
a p contact and an n contact, the p contact electrically connected to the p-type layer, the n contact electrically connected to the n-type layer, wherein at least one of the p and n contacts is a multi-layered contact external to the semiconductor structure, the multi-layered contact comprising:
a metallic reflector layer;
a continuous uniform conducting sheet adjacent to the semiconductor structure, wherein the continuous uniform conducting sheet comprises a metal and makes ohmic contact to the structure; and
a conductive barrier layer interposing the reflector layer and the continuous uniform conducting sheet;
wherein the multi-layer contact has a reflectivity greater than 75% for light at an operating wavelength of the light-emitting device.
2. (Canceled).
3. (Withdrawn) A device, as defined in claim 1, wherein the multi-layer contact has a specific contact resistance less than $10^{-2} \Omega\text{-cm}^2$.
4. (Canceled).
5. (Withdrawn) A device, as defined in claim 1, wherein the reflector layer has a thickness greater than 500 Å.
6. (Withdrawn) A device, as defined in claim 1, wherein the continuous uniform conducting sheet has a thickness less than 200 Å.

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7. (Withdrawn) A device, as defined in claim 1, wherein the reflector layer is selected from the group consisting of Al, Cu, Rh, Pd, and Au.

8. (Withdrawn) A device, as defined in claim 1, wherein the p and n contacts are on opposing faces of the semiconductor structure.

9. (Withdrawn) A device, as defined in claim 8, wherein the continuous uniform conducting sheet comprises Ni and Ag.

10. (Withdrawn) A device, as defined in claim 8, wherein the reflector layer comprises Ag.

11. (Previously Presented) A light-emitting semiconductor device comprising:
a semiconductor structure having at least one p-type and one n-type layer; and
a p contact and an n contact, the p contact electrically connected to the p-type layer, the n contact electrically connected to the n-type layer, wherein at least one of the p and n contacts is a multi-layer contact external to the semiconductor structure, the multi-layer contact comprising:

a metallic reflector layer comprising Ag; and

a continuous uniform conducting sheet adjacent to the semiconductor structure, wherein the continuous uniform conducting sheet comprises ~~a metal~~ Ni and makes ohmic contact to the structure;

wherein the multi-layer contact has a reflectivity greater than 75% for light at an operating wavelength of the light-emitting device.

12-13. (Canceled).

14. (Previously Presented) A device, as defined in claim 11, the multi-layer contact further comprising a barrier layer interposing the reflector layer and the continuous uniform conducting sheet.

15. (Original) A device, as defined in claim 11, the reflector layer having a

thickness greater than 500 Å.

16. (Previously Presented) A device, as defined in claim 11, wherein the continuous uniform conducting sheet has a thickness less than 200 Å.

17. (Canceled).

18. (Currently Amended) A device, as defined in claim 11, wherein the continuous uniform conducting sheet is selected from the group that consists of Ti, Au/NiO₂, and Ni/Au.

19. (Withdrawn) A device, as defined in claim 1, wherein the semiconductor structure includes at least one III-nitride layer.

20. (Previously Presented) A device, as defined in claim 11, wherein the semiconductor structure includes at least one III-nitride layer.

21. (Withdrawn) A device, as defined in claim 1, wherein the continuous uniform conducting sheet absorbs less than 25% of light generated in the semiconductor structure and incident on the continuous uniform conducting sheet.

22. (Withdrawn) A device, as defined in claim 19, wherein a voltage required to forward bias the device is less than 3.5 V.

23. (Withdrawn) A device, as defined in claim 1, wherein the continuous uniform conducting sheet has thickness less than 100 Å.

24. (Withdrawn) A device, as defined in claim 1, wherein:
the continuous uniform conducting sheet comprises Au and has a thickness less than 35 Å;

the conductive barrier layer comprises Rh and has a thickness less than 50 Å; and
the metallic reflector layer comprises Al.

25. (Withdrawn) A device, as defined in claim 8, wherein at least a portion of the n contact overlies at least a portion of the p contact.

26. (Canceled).

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27. (Previously Presented) A device, as defined in claim 11, wherein the multi-layer contact has a specific contact resistance less than $10^{-2} \Omega\text{-cm}^2$.

28. (Previously Presented) A device, as defined in claim 11, wherein the continuous uniform conducting sheet absorbs less than 25% of light generated in the semiconductor structure and incident on the continuous uniform conducting sheet.

29. (Previously Presented) A device, as defined in claim 20, wherein a voltage required to forward bias the device is less than 3.5 V.

30. (Previously Presented) A device, as defined in claim 11, wherein the continuous uniform conducting sheet has thickness less than 100 Å.

31. (Currently Amended) A light-emitting semiconductor device, as defined in claim 11, wherein comprising:

a semiconductor structure having at least one p-type and one n-type layer; and

a p contact and an n contact, the p contact electrically connected to the p-type layer, the n contact electrically connected to the n-type layer, wherein at least one of the p and n contacts is a multi-layer contact external to the semiconductor structure, the multi-layer contact comprising:

the continuous uniform conducting sheet comprises a bi-layer of NiO/Au, wherein the NiO has a thickness less than 100 Å and the Au has thickness less than 50 Å;

the a metallic reflector comprises comprising Al and has a thickness greater than 1500 Å; and

a continuous uniform conducting sheet adjacent to the semiconductor structure,

wherein the continuous uniform conducting sheet comprises Ni and makes ohmic contact to the structure;

wherein the multi-layer contact has a reflectivity greater than 75% for light at an operating wavelength of the light-emitting device.

32-34. (Canceled).

35. (Currently Amended) A device, as defined in claim ~~44~~ 31, wherein:

the continuous uniform conducting sheet comprises Au ~~and has a thickness less than~~
~~100 Å; and~~
the metallic reflector comprises Al.

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